

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
27 October 2005 (27.10.2005)

PCT

(10) International Publication Number  
**WO 2005/101398 A1**

(51) International Patent Classification<sup>7</sup>: **G11B 7/26**

Eindhoven (NL). **LOCH, Rolf, A.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(21) International Application Number:  
PCT/IB2005/051165

(74) Agents: **UITTENBOGAARD, Frank** et al.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(22) International Filing Date: 8 April 2005 (08.04.2005)

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
04101564.5 15 April 2004 (15.04.2004) EP

(71) Applicant (*for all designated States except US*): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

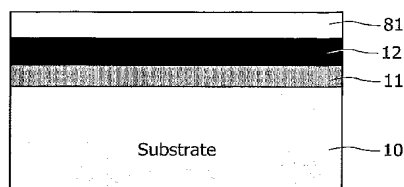
(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **MEINDERS, Erwin, R.** [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA

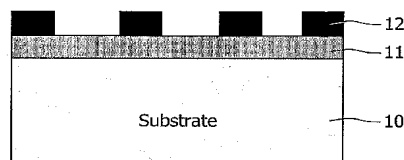
(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

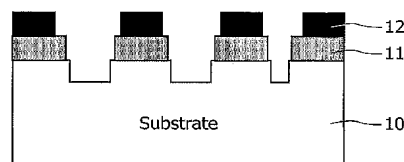
(54) Title: OPTICAL MASTER SUBSTRATE WITH MASK LAYER AND METHOD TO MANUFACTURE HIGH-DENSITY RELIEF STRUCTURE



a



b



c

(57) Abstract: The invention relates to a master substrate, a method for making a high-density relief structure, and optical discs replicated with the high-density relief structure, the master substrate comprising a substrate layer (10) and a recording stack deposited on the substrate layer, the recording stack comprising: - a mask layer (12) - an interface layer (11) sandwiched between said mask layer and the substrate, said mask layer comprising a recording material for forming marks and spaces representing an encoded data pattern, said forming of marks by thermal alteration by a focused laser beam and said marks having a different phase than the unrecorded material. A very high-density relief structure is achieved.

WO 2005/101398 A1



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.